REMARKS/ARGUMENTS

Favorable reconsideration of this application, in view of the present amendment and in light of the following discussion, is respectfully requested.

Claims 44-68 are presently active in this case, Claims 1-43 having been canceled without prejudice or disclaimer. Support for the present amendment can be found in the originally filed claims, and in the originally filed specification, for example, at page 6, line 24 to page 7, line 12. Thus, it is respectfully submitted that no new matter is added.

In the outstanding Office Action, Claims 1 and 22 were rejected under 35 U.S.C. § 102(a) or § 102(e) as anticipated by U.S. Publication No. 2001/0016166 to Dandl et al. (hereinafter "Dandl"); Claims 10 and 31 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,611,863 to Miyagi; Claims 10, 12, 31, and 43 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,634,845 to Komino; Claims 1-34 and 37-43 were rejected under 35 U.S.C. § 103(a) as unpatentable over Komino in view of Dandl, U.S. Patent No. 7,163,603 to Fink, and U.S. Publication No. 2003/0038111 to Carducci et al. (hereinafter "Carducci"); and Claims 35 and 36 were rejected under 35 U.S.C. § 103(a) as unpatentable over Komino in view of Dandl, Fink, and Carducci, and further in view of U.S. Patent No. 5,685,942 to Ishii.

First, Applicant wishes to thank Examiner Chandra and Primary Patent Examiner Lund for the courtesy of an interview granted to Applicant's representative on April 18, 2007, at which time the outstanding issues in this case were discussed. Arguments similar to the ones developed hereinafter were presented and the Examiners indicated that in light of the arguments, the amended claims would overcome the 35 U.S.C. § 102 rejections, but that further search and consideration may be required.

Turning now to the merits, new Claim 44 recites:

> A vacuum processing apparatus, comprising:
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> a processing chamber, including
>
> a lower wall;
>
> an upper wall;
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> a side wall coupled to the lower wall and the upper wall; and
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> a plurality of pumping ports, formed in one of the lower wall, the upper wall, or the side wall;
>
> at least one pumping cell, integrally including a pump and a valve, coupled to a first pumping port; and
>
> at least one seal coupled to a second pumping port, wherein
>
> the at least one pumping cell can be removed from the first pumping port and coupled to a first different pumping port, and
>
> the at least one seal can be removed from the second pumping port and coupled to a second different pumping port such that an arrangement of the at least one pumping cell and the at least one seal is reconfigured.

It is respectfully submitted that the cited references do not disclose or suggest all of the features recited in new Claim 44.

As stated in the originally filed specification, for example, at page 7, lines 5-12, the vacuum processing apparatus recited in Claim 44 provides for the attachment of any number of pumping cells to pump gas from the process chamber depending upon the process being performed and the geometry of the machine. This allows for the use of smaller and less expensive pumping mechanisms when a less-than-full pumping capacity is required. Further, an optimal configuration can be achieved with the least amount of pumping cells required. Therefore, extra pumping cells that are not needed in one machine can be used in another machine. Additionally, the proximity of the pumping cells to the process chamber can lead to

a significant improvement in process chamber conductance and pumping speed at the substrate.

Claims 1-43 are canceled by the present amendment. Thus, it is respectfully submitted that the outstanding rejections of Claims 1-43 are moot. However, since Claims 44-68 recite features similar to those recited in canceled Claims 1-43, new Claims 44-68 will be discussed with respect to the cited references.

Turning first to Dandl, Dandl describes a plasma vacuum pumping cell. Specifically, Dandl describes a process chamber including a multicomponent housing 2 containing a partition wall 4 which divides the chamber into a lower pressure region located below partition wall 4 and a higher pressure region located above partition wall 4.[1] Dandl also describes that the higher pressure region is surmounted by a turbomolecular pump 18 to evacuate gas from the region above partition wall 4 to an outlet region at atmospheric pressure.[2]

However, Dandl does not disclose or suggest "a process chamber . . . a plurality of pumping ports," "at least one pumping cell, integrally including a pump and a valve, coupled to a first pumping port," and "at least one seal coupled to a second pumping port," as recited in new Claim 44.

Instead, Dandl describes a single pump 18 and does not describe a pumping cell or a seal coupled to a pumping port. Thus, it is respectfully submitted that Dandl does not disclose or suggest every feature recited in new Claim 44.

Turning now to Miyagi, Miyagi describes a semiconductor processing apparatus and cleaning method thereof. Specifically, Miyagi describes a plasma reaction chamber 26 with

[1] See Dandl, at paragraph [0069].
[2] See Dandl, at paragraph [0074].

two exhaust ports 32 and 33 formed in the side wall surface of the chamber 26 with leakage-type butterfly valves 34 and 35 provided at lower portions of the exhaust ports 32 and 33.[3]

However, it is respectfully submitted that Miyagi does not disclose or suggest "at least one pumping cell, integrally including a pump and a valve, coupled to a first pumping port" and "at least one seal coupled to a second pumping port wherein the at least one pumping cell can be removed from the first pumping port and coupled to a first different pumping port, and the at least one seal can be removed from the second pumping port and coupled to a second different pumping port such an arrangement of the at least one pumping cell and the at least one seal is reconfigured," as recited in new Claim 44.

Instead, Miyagi merely describes leakage-type butterfly valves 34 and 35 that are configured such that a slight gas flow is formed even when the valves are in a full closed condition.[4] Additionally, Miyagi expressly teaches away from using a gate valve.[5] Thus, the butterfly valves 34 and 35 cannot seal the plasma reaction chamber 26 so that if one of the pumps 36 and 37 were removed from the chamber 26, the chamber would not function properly. Additionally, Miyagi does not disclose or suggest any other sealing apparatus coupled to a pumping port. Further, Miyagi does not disclose or suggest reconfiguring an arrangement of the pumps. Therefore, it is respectfully submitted that Miyagi does not disclose or suggest every feature cited in new Claim 44.

Turning now to Komino, Komino describes a transfer module and cluster system for a semiconductor manufacturing process. Specifically, Komino describes a process module 80 including a plurality of pumps 88 coupled to a housing 82 of the process module 80.[6] Additionally, Komino describes that valves 89 open and close passages between respective

[3] See Miyagi, at column 4, lines 20-25.
[4] See Miyagi, at column 6, lines 27-29.
[5] See Miyagi, at column 6, lines 32-37.
[6] See Komino, at column 17, lines 9-35.

pumps 88 and the process chamber PC.[7] Additionally, Komino describes that when a control unit 95 detects a failed pump 88, one of the valves 89 corresponding to the failed pump 88 is closed so that the passage between the failed pump 88 and the process chamber PC is closed.[8] Next, Komino describes that the failed pump 88 is removed and a normal working pump 88 is mounted to the housing 82, such that the valve 89 can be opened and pumping can be restored.[9]

However, Komino does not describe or suggest "at least one pumping cell, integrally including a pump and a valve, coupled to a first pumping port" and "at least one seal coupled to a second pumping port, wherein the at least one pumping cell can be removed from the first pumping port and coupled to a first different pumping port, and the at least one seal can be removed from the second pumping port and coupled to a second different pumping port such that an arrangement of the at least one pumping cell and the at least one seal is reconfigured," as recited in new Claim 44.

Instead, Komino merely describes closing a valve 89 such that a single pump 88 can be removed, repaired, and replaced, and reconnected to the same valve 89. Komino does not disclose or suggest that a pumping cell including both a pump and a valve can be removed from a first port and coupled to a different port. Additionally, Komino does not disclose or suggest a pumping cell which can be removed from a pumping port and coupled to a different pumping port. Komino also does not describe reconfiguring the arrangement of the pumping cells or a seal which can be removed from a second pumping port and couple to a second different pumping port. Therefore, it is respectfully submitted that Komino does not disclose or suggest every feature recited in new Claim 44.

[7] See Komino, at column 17, lines 9-35.
[8] See Komino, at column 17, lines 20-24.
[9] See Komino, at column 17, lines 20-35.

Initially, it is respectfully submitted that Fink does not qualify as prior art under any section of 35 U.S.C. § 102. However, if the Office disagrees, it is respectfully requested that the section of 35 U.S.C. § 102 that qualifies Fink as prior art be identified in the next Office communication. Regarding the remaining secondary references (Carducci and Ishii), it is respectfully submitted that neither of the secondary references cure the above-noted deficiencies of the primary references (Dandl, Miyagi, and Komino).

Therefore, it is respectfully submitted that none of the cited references, taken alone or in combination, recite every feature recited in new Claim 44. Additionally, although directed to an alternative embodiment, new Claim 56 recites features similar to those discussed above with respect to new Claim 44. Therefore, it is respectfully submitted that new Claims 44 and 56, and all claims dependent thereon, are patentable over the cited references.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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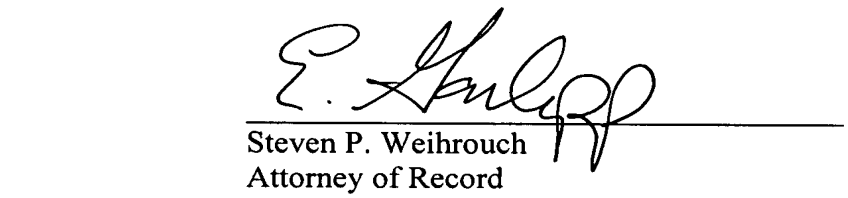
MAIER & NEUSTADT, P.C.



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